UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

Note to Reader
January 15, 1998

Background: As part of its effort to involve the public in the implementation of the Food Quality Protection Act of 1996 (FQPA), which is designed to ensure that the United States continues to have the safest and most abundant food supply. EPA is undertaking an effort to open public dockets on the organophosphate pesticides. These dockets will make available to all interested parties documents that were developed as part of the U.S. Environmental Protection Agency's process for making reregistration eligibility decisions and tolerance reassessments consistent with FQPA. The dockets include preliminary health assessments and, where available, ecological risk assessments conducted by EPA, rebuttals or corrections to the risk assessments submitted by chemical registrants, and the Agency's response to the registrants' submissions.

The analyses contained in this docket are preliminary in nature and represent the information available to EPA at the time they were prepared. Additional information may have been submitted to EPA which has not yet been incorporated into these analyses, and registrants or others may be developing relevant information. It's common and appropriate that new information and analyses will be used to revise and refine the evaluations contained in these dockets to make them more comprehensive and realistic. The Agency cautions against premature conclusions based on these preliminary assessments and against any use of information contained in these documents out of their full context. Throughout this process, If unacceptable risks are identified, EPA will act to reduce or eliminate the risks.

There is a 60 day comment period in which the public and all interested parties are invited to submit comments on the information in this docket. Comments should directly relate to this organophosphate and to the information and issues available in the information docket. Once the comment period closes, EPA will review all comments and revise the risk assessments, as necessary.

These preliminary risk assessments represent an early stage in the process by which EPA is evaluating the regulatory requirements applicable to existing pesticides. Through this opportunity for notice and comment, the Agency hopes to advance the openness and scientific soundness underpinning its decisions. This process is designed to assure that America continues to enjoy the safest and most abundant food supply. Through implementation of EPA's tolerance reassessment program under the Food Quality Protection Act, the food supply will become even safer. Leading health experts recommend that all people eat a wide variety of foods, including at least five servings of fruits and vegetables a day.

Note: This sheet is provided to help the reader understand how refined and developed the pesticide file is as of the date prepared, what if any changes have occurred recently, and what new information, if any, is expected to be included in the analysis before decisions are made. **It is not meant to be a summary of all current information regarding the chemical.** Rather, the sheet provides some context to better understand the substantive material in the docket (RED chapters, registrant rebuttals, Agency responses to rebuttals, etc.) for this pesticide.

Further, in some cases, differences may be noted between the RED chapters and the Agency's comprehensive reports on the hazard identification information and safety factors for all organophosphates. In these cases, information in the comprehensive reports is the most current and will, barring the submission of more data that the Agency finds useful, be used in the risk assessments.

Jack E. Housenger, Acting Director
Special Review and Reregistration Division

DP BARCODE: D245016

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC
SUBSTANCES

MEMORANDUM

SUBJECT: Response to the February 12, 1998 EPA Data Call-In Review for methidathion on Drinking Water Exposure and Risk Assessments
PC Code: 100301; CAS# 950-37-8, MRID#44518301, DP BARCODE: D245016

TO: Kathy Monk, Branch Chief
Michael Goodis, PM Team Reviewer
Reregistration Branch II
Special Review and Reregistration Division (7508W)

FROM: James C. Lin
Environmental Engineer
Environmental Risk Branch III
Environmental Fate and Effects Division (7507C)

THRU: Henry Nelson
Chemist
Environmental Risk Branch III
Environmental Fate and Effects Division (7507C)

Daniel Rieder
Branch Chief
Environmental Risk Branch III
Environmental Fate and Effects Division (7507C)

DATE: May 19, 1998

For the reasons identified below, we would like to have all the new studies submitted and reviewed, before we decide whether to repeat the effort for new drinking water assessment. We see no benefit in generating several interim assessments before the full data set has been submitted and reviewed. To facilitate the review process of drinking water assessment, the registrant is encouraged to run the models with the new inputs, once all the pending Environmental Fate studies are finished.

1. The tier 1 and tier 2 drinking water assessment reports of methidathion were based on the results of acceptable Environmental Fate studies, the modeling inputs guidance, and the professional best judgement for input selections.

2. Among the input parameters in question, some of them are not sensitive enough to affect the EEC results based on Novartis' suggestions.

   (1) Water solubility - The registrant has suggested to use the value of 220 mg/L as the input value for water solubility in stead of 250 mg/L. Since all estimated exposure values are less than 1 mg/L, which is significantly less than the water solubility, there will be no difference in the exposure values for either water solubility values, because they are only used as upper bounds for EECs.

   (2) Vapor pressure - The registrant has suggested to use the value of 1.87×10^{-6} mm Hg as the input value for vapor pressure in stead of 2.5×10^{-6} mm Hg. The volatilization process considered in EXAMS is computed based on Henry's constant, which is the ratio between vapor pressure and water solubility. When the magnitude of Henry's constant is in the range of 10^{-9} atm-m^3/mole as it is for methidathion, the effect of volatilization is almost nil.

   (3) Hydrolysis half-life - The registrant has mentioned a new hydrolysis study is being finalized. We will consider the new results once it have been reviewed and accepted. The average hydrolysis half-life at pH 7 could be used as input in GENEEC. For EXAMS, the hydrolysis constants (Kah, Knh, and Kbh) need to be calculated based on the half-life values at three different pH levels.

   (4) Foliar dissipation half-life - The registrant has suggested to use an average value of 2.8 days based on two on-going studies. We will consider the new results once the studies have been reviewed and accepted.

   (5) Foliar washoff coefficient - The registrant has suggested to use a default value of 0.1 as mentioned in the user's manual. It is the division policy for all chemicals to use a conservative default value of 0.5 unless there are foliar washoff studies to justify the input value.

(6) Anaerobic soil metabolism half-life - The registrant has suggested to use a value of 10 days. This parameter is not used in GENEEC, SCI-GROW or PRZM/EXAMS when considering water assessments. As stated in page 6 of the tier 2 water assessment memorandum (Lin, 1998), the 10 days anaerobic soil metabolism half-life was not used in modeling. The value was used to estimate the half-life of the anaerobic aquatic metabolism half-life, which the registrant has concurred.

(7) Aerobic aquatic metabolism half-life - The registrant has suggested to use a value of 6 days for this parameter. According to the input guidance, the idea case is to use the laboratory aquatic aerobic metabolism half-life. If unavailable, we will use twice of the soil aerobic metabolism half-life due to the uncertainty of no laboratory results of aerobic aquatic metabolism study.

(8) k/K_{oc} - The registrant has identified the difference between K_{oc} and K_{om}. We will consider this discrepancy along with all others mentioned above, when additional studies are reviewed and accepted.

Reference - Lin, J. C. 1998. "Tier 2 Refined Modeling of Surface Water for Methidathion with PRZM/EXAMS." Environmental Risk Branch III, Environmental Fate and Effects Division, Office of Pesticide Programs, U. S. Environmental Protection Agency, Washington, DC.